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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,888	06/08/2001	Takashi Yamamoto	1095.1187	9572

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EXAMINER	
PAPPAS, PETER	
ART UNIT	**PAPER NUMBER**
2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/875,888	YAMAMOTO, TAKASHI	
	Examiner	Art Unit	
	Peter-Anthony Pappas	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 5-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 5-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 5-9 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. (U.S. Patent No. 5, 003, 498), in view of Watanabe et al. (U.S. Patent No. 5, 701, 403).

3. In regard to claim 1 Ota et al. teaches a graphics display method and apparatus, wherein graphics processing or geometric modeling functions is/are effected efficiently producing an object having a 3D shape, and a graphic display apparatus having geometric modeling functions, which perform the steps of dividing a 3D shape into a number of 3D geometric entities (primitive solids) defining a given object's 3D shape as a synthesis of memorized geometric entities (column 2, lines 44-66; column 3, lines 48-53; column 6, lines 30-37; Figs. 1, 2A, 7A-D, 8A-D).

Said graphics display and display method comprise the steps of determining 2D drawings, which are taken in a number of directions (perspectives), of one object to be displayed via a display means 12 (column 3, lines 28-33; column 5, lines 64-68). The geometry entities consist of a top view, a front view, a side view and a perspective view (column 3, lines 40-43; Fig. 23). It is noted said views are considered a plurality of orthographic projection views.

Ota et al. illustrates in Figs. 6A, 6B and 6C the set operation and the synthesis describing mode 20 is a mode of determining union among the geometric entities 14. The synthesis describing modes 21 and 22 are the modes of determining subtraction and intersection, respectively, among the geometric entities 14. Figs. 2A and 2B illustrate two examples described by using the arrangement mode 23 in synthesis modes. Figs. 7A, 7B, 7C and 7D illustrate four concrete examples of the set operation, in which Fig. 7A shows the positional relationship between the geometric entities A and B. Fig. 7B shows the results of the union (A+B) of the geometric entities A and B, Fig. 7C the results of the subtraction (A-B) of geometric entities A and B, and Fig. 7D the results of the intersection (A·B) of the geometric entities A and B (column 6, lines 30-37; column 7, lines 49-68; column 8, lines 1-2). It is noted said union, subtraction and intersection of said respective geometric entities are considered Boolean operations.

Ota et al. fails to explicitly teach maintaining a projection view database associating each of the 3D geometric features with a plurality of 2D graphic elements contained in said orthographic projection views. Watanabe et al. teaches a CAD system adapted to consider a mutual relationship (association) between figure elements of a 2D drawing and the shape of a 3D product model together with drawing regulations (column 4, lines 13-21). Said system includes a drawing regulation database 4 for storing data showing a correspondence between drawing regulations and drawing in the CAD system, a product model database 7 for storing data which represents the shape of a product model created by the product modeling building section 3 and a drawing

database 9 for storing 2D drawing data produced by the drawing data production section 8 (column 13, lines 23-59; column 15, lines 8-16; column 21, lines 1-12).

It is noted that Fig. 39 is considered to illustrate a 2D projection view of a 3D model which is illustrated in Fig. 38. Furthermore, it is noted that said 3D model is considered to be represented by a plurality of 2D objects (e.g. for a cube a plurality of 2D squares) located within a plurality of projection views (e.g. top, front, side and perspective views). Watanabe et al. teaches identifying one of said 2D objects and modifying said object (e.g. the diameter of said object), the result of which is the identification and modification of the corresponding 3D object (column 20, lines 13-54; column 23, lines 30-46).

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate the database storage means taught by Watanabe et al. into the system taught by Ota et al., because while Ota et al. teaches transferring entity information (column 15, lines 3-25), which would require the maintaining of said entity information, Ota et al. does not elaborate on how said entity information is maintained or stored for retrieval after transfer and as such incorporating a database for the storage of said entity information would alleviate this issue as well as provide a means for later search and retrieval of said information, providing a centralized storage location for accessing stored entity information.

Ota et al. teaches that the designer 1 designates an entity which he desires to move with the stylus pen 6 (graphic element selection means), via the four divisional picture frames 30-33 on each of which the movement of said entity can be ascertained

(column 15, lines 3-25; Fig. 23). It is noted the movement of said entity via picture frames 30-32 is considered to result in the movement of said entity in picture frame 33, wherein said entity displayed in picture frame 33 (3D feature selection means) is considered a 3D geometric feature. Furthermore, by designating said entity in one of said four divisional picture frames it is noted said entity is considered to be set to a selected state in which said designer can further manipulate said entity.

4. In regard to claim 3 Ota et al. teaches that a given object having a 3D shape is produced by the set operation (functions for determining a union, a subtraction and an intersection) of the geometry entities (column 6, lines 30-37). In order to change the 3D shape, the related entity information alone may be transferred, so that the changing and inputting of a shape can be done efficiently (column 14, lines 21-27). It is noted said top, front, side and perspective views are considered indicative of a given line of sight, respectively.

5. In regard to claim 5 Ota et al. teaches if the stylus pen 6 is moved in, for example, the divisional picture frame 30 that a reference point of the cylinder is altered so that the point to which the stylus pen 6 has been moved and the origin of the geometry entity coordinate system 18 of the cylinder agree with each other, and the drawing data on this condition are prepared, the resultant data being re-indicated on the graphic display 12 (column 15, lines 10-22). Ota et al. fails to explicitly teach having the identified geometric feature appear with emphasis, in contrast to other features shown in a 3D view on the monitor screen.

Official Notice is taken that both the concept and the advantages of giving emphasis, be it either visually or audibly, to a given selected object in contrast to any objects surrounding said object are well known and expected in the art. Thus, it would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate said selection emphasis into the system as taught by Ota et al., because by identifying a given user selected object with emphasis, from other surrounding and possibly like objects, it would allow a given user to focus in on said object without being distracted by said surrounding objects and thus result in said selected object being more clearly identifiable.

6. In regard to claim 6 the rationale disclosed in the rejection of claim 1 is incorporated herein. Ota et al. teaches a system for performing interactions between a designer 1 and a graphic display control apparatus 2 or a host computer 3 (application system). When the command 4 is required to be processed by the host computer 3 it is transferred thereto via an interface means 9. The host computer 3 has an application program 10 loaded thereon (column 5, lines 44-58). It is inherent that an application program, which is loaded on a given host computer, is stored on a computer-readable medium.

7. In regard to claim 7 it is noted said top, front, side and perspective views are considered hierarchically structured as said top, front and side views are elements which comprise a root perspective (3D) view. Ota et al. teaches a method for superimposing (overlaying) an entity on another (column 16, lines 48-53).

8. In regard to claim 8 the rationale disclosed in the rejection of claim 6 is incorporated herein (Watanabe et al.: column 4, lines 13-21; column 13, lines 23-59; column 15, lines 8-16).

9. In regard to claim 9 Ota et al. fails to explicitly teach wherein the 3D feature selection means searches the database for the one of the 3D geometric feature corresponding to the selection graphic element. Watanabe et al. teaches that input information interpreting section 2 enables the drawing processing section 61. Said drawing processing section 61 searches for the 2D drawing which corresponds to the updated product model data in the 2D-3D link data base 5 and retrieves the 2D drawing data from the drawing data base 9. The drawing processing section 61 modifies the remaining views, which the user has not changed, included in the retrieved drawing data (column 19, lines 29-36).

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate the searching of a database for 2D drawing information as taught by Watanabe et al. into the system as taught by Ota et al., because by utilizing a central storage location for stored entity/drawing information, as shown above, it would provide a means by which said information could now be retrieved and thus would allow for a system incorporating such a storage and retrieval means to more easily access information multiple times without requiring for said information to be recreated. In addition by utilizing a well known data storage format such as a database said information could be more easily transferred amongst computer systems allowing for

said information to be more easily updated with new information or swapped out for new information, for example.

10. In regard to claim 11 the rationale disclosed in the rejection of claim 1 is incorporated herein. It is noted said top, front, side and perspective views are defined by the system.

11. In regard to clam 12 the rationale disclosed in the rejection of claim 1 is incorporated herein (Ota et al.: column 6, lines 30-37; column 7, lines 49-68; column 8, lines 1-2).

12. In regard to claim 13 the rationale disclosed in the rejection of claims 1, 5 and 8 are incorporated herein. It is noted said apparatus is considered to perform the method.

13. In regard to claim 14 it is noted said system is considered to perform the extracting creating, entering, displaying of the orthographic projection view data, identifying and displaying the 3D view in sequence. Furthermore it is noted that "sequence" does not imply any particular order and thus said claim language is interpreted accordingly.

14. In regard to claim 15 see Figs. 9a and 23.

15. In regard to claim 16 the rationale disclosed in the rejection of claim 1 is incorporated herein. Ota et al. teaches a graphic display control apparatus 2 and host computer 3 (2D drawing generating unit and 3D feature selection unit), graphic display means 12 (display) and (graphic element selection unit) stylus pen 6, command 4 and designer 1 (column 5, lines 46-52; Fig. 1).

16. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. (U.S. Patent No. 5, 003, 498) and Watanabe et al. (U.S. Patent No. 5, 701, 403), as applied to claims 1, 3, 5-9 and 11-16, in view of Foley et al. (Computer Graphics: Principles and Practice).

17. In regard to claim 10 Ota et al. and Watanabe et al. fail to explicitly teach where 3D geometric features other than the identified one of the 3D geometric features are masked. Foley et al. teaches that a primitive can be clipped (masked) prior to scan conversion to a clip rectangle, wherein pixels belonging to said primitive that are outside the clip region are not displayed.

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate clipping into the system as taught by Ota et al., because as Foley et al. al teaches the advantage of clipping before scan conversion is that the scan covert must deal with only the clipped version of the primitive, not with the original (possibly much larger) one. In addition by isolating said primitive to the point where everything else is not scan converted it allows for a large quantity of emphasis on be placed on said primitive.

Response to Arguments

18. In response to Applicant's remarks that Watanabe et al. teaches that only the corresponding edge 503 of the 3D model will be returned it is noted that no where in the cited passage (column 43, lines 1-24) does Watanabe et al. limit the invention to only returning said corresponding edge 503 of the 3D model. Furthermore, it is noted that while processing in said cited passage is, at least to some degree, localized to an edge

that both the respective 2D and 3D object to which said edge belongs are identified and thus not excluded.

19. In response to Applicant's remarks that Watanabe et al. fails to teach or suggest that the projection view database associates each of the 3D geometric features with a plurality of 2D graphic elements contained in the orthographic project view it is noted that Fig. 39 is considered to illustrate a 2D projection view of a 3D model which is illustrated in Fig. 38. Furthermore, it is noted that said 3D model is considered to be represented by a plurality of 2D objects (e.g. for a cube a plurality of 2D squares) located within a plurality of projection views (e.g. top, front, side and perspective views). Watanabe et al. teaches identifying one of said 2D objects and modifying said object (e.g. the diameter of said object), the result of which is the identification and modification of the corresponding 3D object (column 20, lines 13-54; column 23, lines 30-46).

Watanabe et al. further teaches that said CAD system comprises a 2D and 3D integrated data base in which both 2D data and 3D data can be manipulated together by mutually relating the 2D data to the 3D data. A drawing data in the drawing data base 9, a product model data in the product model data base 7 and a 2D-3D link data in the 2D-3D link data base 5 are integrated to be a 2D and 3D integrated data as a data structure. In this case, the drawing data processing section 8, product model building section 3 and drawing processing section 62 can access to the 2D and 3D integrated data base (column 21, lines 1-12).

20. Applicant's remarks have been fully considered, but are not deemed persuasive.

Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter-Anthony Pappas whose telephone number is 571-272-7646. The examiner can normally be reached on M-F 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Peter-Anthony Pappas
Examiner
Art Unit 2628

PP

ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER